**Products, Materials and Byproducts:**

Cleaning Products:

Star San (Sanitizing Agent) – Star San is contains phosphoric acid and is corrosive; direct contact must be avoided. Using this material with other sanitizing agents (such as chlorine) can form some toxic gases (such as chlorine gas). STAR SAN is authorized by the U.S. Department of Agriculture for use as a general cleaning agent. The MSDS for this product is available.

PBW (Cleaning Agent) - PBW is composed of silicates, phosphates and surfactants. Direct contact with this material can cause some irritation. PBW is not harmful to the environment, is biodegradable, and will not harm septic systems. The MSDS for this product is available.

Process Raw Materials:

Fine particulates after milling – the fine dust created during the milling process is explosive. Sparks from metal contact while milling or during transportation on a bucket conveyer can ignite the concentrated dust particles. During the subsequent wet processes, if material escapes the mashing vessel, it can dry on the floor and form a dust layer that is also susceptible to an ignition source and could explode.

Hops – Hops are very bitter so ingestion is unpleasant, but not harmful. The MSDS for this raw material in the leaf form is available.

Yeast – Yeast is non-volatile and presents no physical hazards, but users should wash hands before eating, drinking, or using the restroom. Spent yeast can cause a high oxygen demand and should be collected for reuse or properly disposed of.

Products and Byproducts:

Carbon Dioxide – CO2 gas is stable and non-flammable but should not be inhaled in large quantities.

Beer - contains ethanol which is flammable. Excessive consumption has many physical hazards such as stomach irritation and vomiting, liver damage, slowed respiration, hypothermia and seizures.

Safety containment considerations are being made to accommodate spent grains and excess yeast and CO2 produced during fermentation.

**MSDS for Star San**

**MATERIAL SAFETY DATA SHEET**

**COMPOSITION:** Solution of Phosphoric Acid and Dodecylbenzene sulfonic acid.

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**HAZARDOUS INGREDIENTS: % ACGIH TLV OSHA/PEL**

Phosphoric Acid (75%) (CAS# 7664-38-2) 50.0 1 mg/ m 1 mg/M3(TWA)

Dodecylbenzene Sulfonic Acid (CAS# 27176-87-0) 15.0 N/A

Isopropyl Alcohol 10.0 983 mg/M3 1230 mg/M3

(Other compositional information is considered a trade secret).

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**PHYSICAL DATA**

**APPEARANCE:** Dark, amber liquid **SOLUBILITY IN WATER:** Complete

**ODOR:** Slight **SPECIFIC GRAVITY:** 1.326

**pH OF CONCENTRATE:** 1 **FLASH POINT:** NONE

**EVAPORATION RATE:** .9 (water=1)

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**FIRE AND EXPLOSION DATA**

**FLASH POINT:** 121 deg. F

**FLAMMABILITY:** Non - combustible, substance itself does not burn but may decompose

to produce corrosive and/or toxic fumes.

**EXTINGUISHING MEDIA:** Water, Carbon Dioxide, Foam

**UNUSUAL FIRE AND**

**EXPLOSION HAZARDS:** Contact with metals may evolve flammable hydrogen gas. Containers

may explode when heated. Contact with chlorine will evolve chlorine

gas.

**NFPA HAZARD RATING:** Health 3; Flammability 0; Reactivity 1

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**HEALTH HAZARD DATA**

- EYE CONTACT: Corrosive to the eyes may cause severe damage.

- INHALATION: Irritating to the nose , throat, and respiratory tract.

- INGESTION: Harmful if swallowed. Swallowing product can cause sever burns to lining of throat and

stomach

- SKIN CONTACT: Substance is corrosive. Causes severe skin burns.

- SIGNS AND SYMPTOMS OF EXPOSURE: Destruction to skin and eye tissue

- SUPPLEMENTAL HEALTH INFORMATION: NOTE TO PHYSICIAN: Probable mucosal damage may

contraindicate the use of gastric lavage. Measures against circulatory shock, reparatory depression and convulsions

may be needed.

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**EMERGENCY & FIRST AID PROCEDURES**

**EYE CONTACT:** Flush with cool running water for at least 15 minutes. For eye exposure irrigate with saline

solution Get medical attention as soon as possible.

**SKIN CONTACT:** Flush with cool running water. If irritation develops get medical attention.

**INGESTION:** If conscious, give several glasses of milk, water, egg whites or gelatin solution. Get

medical attention immediately. DO NOT induce vomiting.

**INHALATION:** Move victim to fresh air. Call emergency medical care. Apply artificial respiration if victim

is not breathing.

**SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure limits

Listed in Hazardous Ingredients by using engineering controls. If not feasible,

Use approved full face piece air-purifying respirator.

**VENTILATION SYSTEM:** Provide general and/or local exhaust ventilation to maintain airborne

levels below the exposure limits in Hazardous Ingredients. Refer to “Industrial

Ventilation” by ACGIH for a manual of recommended practices.

**SKIN PROTECTION:** If skin or contamination of clothing is likely, protective clothing should be worn.

**EYE PROTECTION:** Chemical goggles are required.

**PROTECTIVE GLOVES:** Wear chemical resistant gloves.

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**REACTIVITY DATA**

**INCOMPATIBLE MATERIALS:** Alkalis, chlorinated products, and soft metals.

**STABILITY:** Product is stable.

**POLYMERIZATION:** Will not occur.

**DECOMPOSITION PRODUCTS:** May give off phosphorous oxide at high heat (fire conditions).

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**SPILL OR LEAK PROCEDURES**

**SPILL:** See Emergency/ First Aid Procedures and Special Protection Information for hazards and

exposure controls. Dike with sand or earth to contain spill. Avoid ignition sources.

Absorb with sand to other non-flammable material and transfer to approve DOT drum for

recovery or disposal.

**DISPOSAL:** Dispose of in accordance with local, state and federal regulations.

**GENERAL:** CERCLA/SARA requires notification to the appropriate Federal state and local

authorities of releases of hazardous or extremely hazardous quantities equal to or greater

than the Reportable Quantities (RQs) in 50 CFR 302.4 and 40 CFR 355.

SARA Title 313 requires submissions of annual reports of releases of toxic chemicals that

appear in 40 CFR 372. Components present in this product at a level which could

require reporting under statute are listed under identification.

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**MSDS for PBW**

**MATERIAL SAFETY DATA SHEET**

**COMPOSITION:** SILICATES, PHOSPHATES, AND SURFACTANTS

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**PHYSICAL DATA**

**APPEARANCE:** White Powder **SOLUBILITY IN WATER: < 10%**

**ODOR:** Odorless **pH of 1% SOLUTION:** 11-12

**MELTING POINT:** N/A **BULK DENSITY: 64 lbs/cu ft**

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**FIRE AND EXPLOSION DATA**

**FLAMMABILITY:** Not flammable

**EXTINGUISHING MEDIA:** Water, carbon dioxide, foam

**UNUSUAL FIRE**

**& EXPLOSION HAZARDS:** None known

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**HEALTH HAZARD DATA**

**EYE CONTACT:** Irritant, prolonged contact may damage eye.

**SKIN CONTACT:** Irritant, prolonged contact will cause redness and blistering.

**INGESTION:** May cause nausea, vomiting, abdominal pain.

**INHALATION:** May irritate the nose and throat and cause coughing and chest

discomfort.

**EMERGENCY & FIRST AID PROCEDURES**

**EYE CONTACT:** Immediately flush with cool running water for at least 15 minutes

Get medical attention.

**SKIN CONTACT:** Immediately flush with large amounts of cool water. If irritation

develops see a physician.

**INHALATION:** Get person to fresh air. If burning and irritation persist get

medical attention.

**INGESTION:**If conscious, give several glasses of milk or water. Do not induce

vomiting. Call a physician immediately.

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**SPECIAL PROTECTION INFORMATION**

**PROTECTIVE GLOVES:** Recommended (rubber, PVC)

**EYE PROTECTION:** Recommended (goggles, safety glasses)

**VENTILATION:** Adequate to remove any dust produced

**RESPIRATORY:** Recommended (dust mask)

**OTHER EQUIPMENT:** None needed

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**REACTIVITY DATA**

**INCOMPATIBLE MATERIALS:** Acids

**STABILITY:** Stable under dry conditions, will pick up water.

**POLYMERIZATION:** Keep container closed.

**DECOMPOSITION PRODUCT:** None known

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**MSDS for Hops**

**MATERIAL SAFETY DATA SHEET**

COMPOSITION: Whole leaf hop cones.

APPEARANCE & ODOUR: Flattened, soft green cones with an herbal,

pungent odor.

SPECIFIC GRAVITY: Not Applicable; Solid

PERCENT VOLATILE by VOLUME: < 5%

**SECTION IV - FIRE & EXPLOSION**

FLASH POINT: Not Applicable

EXTINGUISHING MEDIA: Water, CO2

UNUSUAL FIRE & EXPLOSION HAZARDS: Spontaneously combustible when hot

and wet or over dry (< 8% moisture).

**SECTION V - HEALTH HAZARD DATA**

THRESHOLD LIMIT VALUE: Not Established.

ORAL INGESTION: Not applicable – Food product, very bitter, therefore

unpalatable.

EYE CONTACT: May be a mild irritant.

SKIN CONTACT: Prolonged contact could cause dermatitis in some

individuals.

INHALATION: Dust generated during sweeping of spilled product

may cause severe respiratory distress in some

individuals.

**MSDS for Brewer’s Yeast**

**BREWERS YEAST**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Hazardous Components (Chemical Name)** | **CAS #** | **Concentration** |
| 1. | FEED GRADE INGREDIENTS | NA | 100.0 % |

|  |  |  |
| --- | --- | --- |
|  |  |  |

**SECTION 3. Hazards Identification**

**Signs and Symptoms Of Exposure** Dust irritation   
  
**SECTION 4. First Aid Measures**

**Emergency and First Aid Procedures**   
Flush eyes with water.   
  
**SECTION 5. Fire Fighting Measures**

**Flash Pt:** N.A. **Method Used:** No data.   
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** N.A. **Extinguishing Media**   
Water   
  
**Steps To Be Taken In Case Material Is Released Or Spilled**   
Salvage if not contaminated.

**Appearance and Odor**   
Tan crumbles with slightly sour odor

**Incompatibility - Materials To Avoid**   
Avoid oxidation as it may affect potency of vitamins.